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DOR(CAM) RESEARCH NOTE RN 9905

POPULATION FLOW IMPLICATIONS OF ELIMINATING THE COMPULSORY RETIREMENT AGE

By

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and
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OTTAWA, CANADA

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ABSTRACT

Recently, the Personnel Operational Research Team (PORT) was asked to carry out an assessment of the implications of the elimination of the Compulsory Retirement Age (CRA). Three different CRA scenarios have been analyzed using the new Long Range Planning Model, an application developed by the PORT using the Generic Model (GeM) environment. Measures that have been studied include annual releases, promotions, and intake as well as the age distribution of the CF.

While the elimination of the CRA may have a negative impact on a limited number of occupational groups at certain rank levels, model results indicate that the Canadian Forces (CF) would not be severely affected. Removal of the CRA (without changing pension entitlements) would not significantly alter the age distribution of the CF and the average number of annual releases and promotions for most CF members - under the current Terms of Service. However, annual intake would be expected to decline. If the CRA were to be eliminated at the same time that pension entitlements were delayed, then there would be adverse effects on the age distribution, promotion rates, release rates, and annual intake.

RÉSUMÉ

Dernièrement, l'Équipe de recherches opérationnelles en personnel (EROP) a été chargée d'évaluer les répercussions qu'aurait l'élimination de l'âge de retraite obligatoire (ARO). Trois scénarios différents concernant l'ARO ont été analysés, et ce à l'aide du nouveau modèle de planification à long terme, une application développée par l'EROP qui fait appel à l'environnement du modèle générique. Les données qui ont été étudiées comprennent les libérations annuelles, les promotions et les entrées ainsi que la distribution selon l'âge des FC.

Bien que l'élimination de l'ARO puisse avoir un effet négatif sur un certain nombre de groupes professionnels et de grades, les résultats de la modélisation indiquent que les FC ne seraient pas sérieusement touchées. Éliminer l'ARO (sans changer les droits à pensions) ne modifierait pas de façon significative la distribution selon l'âge des FC ni la moyenne annuelle des libérations et des promotions pour la plupart des membres des FC (selon les conditions de service actuelles). Cependant, le nombre annuel d'entrées tendrait à diminuer. Si l'ARO était éliminée et que les droits à pensions étaient reportés également, on constaterait des effets pervers sur la distribution selon l'âge, sur les taux de promotions et de libérations ainsi que sur le nombre annuel d'entrées.

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Population Flow Implications of Eliminating the Compulsory Retirement Age

I. INTRODUCTION

Background

1. The Canadian Forces (CF) releases virtually all members at age 55 - the Compulsory Retirement Age (CRA). CRA releases ensure that job vacancies occur and this causes a certain number of transfers and/or promotions to occur in a sort of "trickle-down" which affects members at that rank and below. Proper recruitment and selection of individuals for subsequent promotions and transfers can help to maintain an appropriate distribution of experience at each rank level as well as contributing to better physical fitness levels in the CF. Also, these flows may provide improved opportunity for the development of senior leaders as well as incentives for service. Thus, many CF Human Resource (HR) managers maintain that the current CRA policy contributes to operational effectiveness and readiness in the CF.

2. Recently, the Director of Human Resource Research and Evaluation (DHRRE) asked the Personnel Operational Research Team (PORT) to carry out an assessment of possible implications of the elimination of the CRA as a potential outcome from a challenge to this policy under the Canadian Charter Human of Rights and Freedoms (Ref 1). Reference 2 provides a similar analysis, conducted by the Directorate of Manpower Analysis (D Man A) ten years ago. That study limited its analysis to one synthetic officer occupation which was based on an amalgamation of five real occupations, and made use of the Long Range Planning Model (LRPM), a stock and flow model developed within D Man A and adapted for desktop computer use (Ref 3). Although that model is no longer supported, a new LRPM has been developed and applied to similar problems within the PORT. Reference 4 documents this new model.

Aim

3. The aim of this paper is to assess some implications of the possible elimination of the CRA on a number of population flow measures obtainable from the application of analytical HR models. It should be emphasized that this is a research paper and that the current CRA policy remains in effect.

4. A secondary aim of this paper is to compare the analytical results reported here with previous CRA research carried out by D Man A ten years ago.

Scope

5. The methodology employed for this analysis is a new version of the LRPM which was used in the previous D Man A study. That study is used here as a benchmark for comparison. A number of assumptions contained in that study have been retained in order to facilitate comparison of results. However, this study broadens the scope of the analysis to both officer and Non-Commissioned Member (NCM) occupations.

6. As in Ref 3, three distinct CRA policy scenarios have been developed for analysis using new PORT analytical tools. The baseline scenario is a model that reflects the current CRA policy. In all three scenarios, CF population flows (such as releases, promotions, transfers, and intake) are predicted. If the flows measured in the excursion scenarios are significantly different from the baseline case, then it may be concluded that eliminating the CRA will have an impact on the CF. Also, predictions of "steady-state" age population distributions in these three scenarios are made in order to compare the outcomes of each scenario.

7. The new LRPM developed by the PORT contains a number of modelling assumptions described in Ref 4. These have been carried through to this analysis except where indicated. Also, the data that were used to carry out the analysis have been updated to reflect recent attrition history and amendments to the CF Terms of Service policies.

Caveats

8. Although the authors have taken time to check the validity of the modelling methodology, the results reported here must be considered as preliminary in nature. A full sensitivity analysis of the modelling results was not possible because limited resources were available for the study. Nevertheless, the authors believe that the sample results reported here are "good" indicators of what would happen if the CRA were eliminated.

II. ANALYSIS METHODOLOGY

The Generic Model (GeM) Utility

9. The new LRPM has been developed as an application of the Generic Model (GeM) utility - a powerful model building environment that was originally developed by D Man A. Models developed in the GeM environment capture the influences of the many intricacies of the CF's system of career development such as:

a. controlled ranks;
b. minimum time in rank (TIR) requirements before promotion;
c. contract renewal through the CF Career Development Plan (CFCDP) system of gates;
d. minimum/maximum promotion/intake bounds;
e. CRA; and
f. a variety of entry plans having individualized entry demographics.

10. Originally GeM was developed as a family of executable programs that operated in the OS/2 environment. GeM now operates in the Windows 95 environment with the use of a Graphical User Interface (GUI). The most recent version of GeM incorporates a visual model building environment as well as model execution animations.

11. Career flow modelling of CF occupations, as conducted in GeM, has achieved a great deal of acceptance among personnel planners and career managers. It is a routine part of the analysis supporting occupational restructuring, a tool for investigating the policy alternatives for Military Occupational Reviews, and has provided short term guidance in the setting of intake and CFCDP gate levels to meet occupational objectives. More recently, GeM models have been applied to support more strategic policy development (e.g. Refs 5 to 8).

The New LRPM

12. The GeM utility is a multifunction tool for building fixed time-step simulation models. As a result of this flexibility, it can be used in a variety of analytical studies. For example, the new LRPM was constructed within this simulation environment even though the original LRPM is a typical "stock-and-flow" model. Reference 4 documents the development of the new LRPM and contains a discussion of the advantages of simulation methods in the context of HR policy development.

Modelling Assumptions

13. In order to carry out the analysis, three scenarios were constructed as follows:

a. Scenario 1 (Baseline Case) in which no changes are made to current pension (i.e. superannuation) entitlements and the current CRA policy. Reference 4 describes this scenario in detail;

b. Scenario 2 in which the CRA is removed and current pension rules remain in force; and

c. Scenario 3 in which the CRA is removed and delayed pension benefits are simulated.

14. The Baseline Case assumed current voluntary and CRA release rates. Most GeM models assume historical voluntary post-qualification attrition rates which are a function of Years of Commissioned Service (YCS), entry plan, age, and rank for officer models and age and rank for NCMs. These attrition rates are based on historical data for all releases over the past 15 years. Years where the Forces Reduction Plan (FRP) affected attrition patterns have been excluded from the historical data for attrition. In this analysis, release rates as a function of Years of Service (YOS) have been developed using the PORT strategic desktop computer database (Ref 9).

15. For Scenario 2, the CRA was removed and no modifications to historical voluntary attrition rates were assumed, except that voluntary release rates for YOS in excess of 40 were extrapolated from historical data. An arbitrary release rate of 100% was assumed at 50 YOS. All other assumptions are identical to those contained in Ref 4.

16. For Scenario 3, in addition to the elimination of the CRA, delayed pension entitlements were simulated. To do this, historical voluntary release rates for YOS = 22 were used for each YOS number between 22 and 31 inclusive. Historical voluntary release rates for YOS = 23 to 40 were then used as the rates for YOS = 32 to 49 with 100% of any survivors released "voluntarily" at YOS = 50. This "mapping" allowed PORT to develop a simulated "late pension" environment.

17. As in Ref 4, CF Military Occupations (MOCs) were grouped into three streams:

a. operations (Ops);
b. engineering (Eng); and
c. support (Spt).

The officer streams are shown in Table I. (Definitions of all MOC abbreviations are available on DND Intranet sites such as the Defence Integrated Human Resource

System Reports at http://hr.dwan.dnd.ca/Datamart/engraph/home_e.shtm.) Certain specialty occupational groups such as intelligence and medical/dental have been excluded to be consistent with definitions contained in the Officer Career Development Program (July 1972).

Table I

Officer Occupational Groupings

Operations	Engineering	Support
ARMD	AERE	AEC
ARTY	CELE	LOG
INF	EME	PADM
PLT	MARE	SECUR
ANAV	ENGR	
MARS	AF ENGR	

18. The estimated current trained effective strength levels are 4905, 2726, and 2062 officers in the Ops, Eng, and Spt groups respectively. Table II (on the next page) shows the NCM MOC groupings in the same format. For NCMs, estimated current trained effective strength levels are 13326, 15789, and 12059 in the Ops, Eng, and Spt groups respectively.

19. To reduce model execution time from days to hours, a random sample consisting of ten percent of the entire population was selected as the starting population for the model. Since Ops, Eng, and Spt populations are large and no specific MOCs are simulated, this approach is quite acceptable from a statistical point of view. All staffing targets were correspondingly reduced in the same proportion. Thus the movement of an individual between states corresponds to the movement of approximately ten members in the overall flow. Staffing targets for the model are consistent with maintaining a long-term population of 6,000 - representing 60,000 officers and NCMs in the CF.

Table II

NCM Occupational Groupings

Operations	Engineering	Support
AES OP	ACS TECH	AC OP
ARTYMN AD	ATIS TECH	AMMO TECH
ARTYMN FD	AVN TECH	COMM RSCH
BOSN	AVS TECH	COOK
CL DIV	CE SUPT	FEE OP
CL DIV TECH	CONST TECH	MET TECH
CRMN	E TECH	MP
FD ENGR	MAR EL	MSE OP
FLT ENGR	ED TECH	RMS CLK
INFMN	ECS TECH	STWD
NAVCOMM	FCS TECH	SUP TECH
NCI OP	FIRE FTR	TFC TECH
NES OP	H TECH	
RAD OP	LCIS TECH	
SAR TECH	LMN	
TAS OP	MAR ENG A	
TEL OP	MAR ENG T	
	MAR ENG M	
	MAT TECH	
	NE TECH C	
	NE TECH T	
	NE TECH M	
	NW TECH	
	PH TECH	
	RM TECH	
	SIS TECH	
	VEH TECH	
	W TECH L	
	WFE TECH	

20. The new LRPM was run over a 250 year modelling horizon, starting with today's CF population. The first 50 years of results were discarded to eliminate any "real" members from the database and avoid "boom-bust-echo" phenomena. Then, the results from running the model over the next 200 years were grouped into 20 bins of ten years of results each. Each bin contains ten model years of intake, releases, and promotions. Since the LRPM is based on a 10% sample, these ten years of results are combined to scale the model results up by the required factor of 10. Averages and standard deviations reported in the following tables are based on counting each bin as a single trial result.

III. RESULTS

Releases

21. Release rate results are given below in Table III for the Ops stream as defined previously. These results do not necessarily apply to any particular MOC. Cells that are shaded under Scenario 2 or 3 have a statistically significant difference from the Baseline Scenario (based on averaging the release flows from the 20 "ten year" bins under each scenario and using the standard t-test for significance at the 95% level.)

Table III

New LRPM Results: Average Number of Annual Releases for the Operations Stream

	Scenario 1 Current Policy		Scenario 2 No CRA Current Pension		Scenario 3 No CRA Delayed Pension	
Rank	Annual Releases	Std Dev	Annual Releases	Std Dev	Annual Releases	Std Dev
Colonel	10.6	3.3	10.3	3.0	6.9	2.5
Lt Colonel	31.2	4.9	30.5	4.8	22.3	4.4
Major	52.2	7.0	54.0	6.9	45.7	7.0
Capt (ROTP)	80.4	8.8	77.2	8.8	76.0	8.6
Capt (Others)	63.9	7.2	60.5	7.9	60.4	8.0
Lieutenant	87.4	9.9	83.0	8.5	81.0	8.8
CWO	15.9	3.8	13.1	3.6	10.8	3.0
MWO	33.6	5.7	33.8	5.6	23.5	4.8
WO	63.4	8.1	62.3	8.6	56.8	6.7
Sergeant	95.3	9.2	95.6	9.5	86.2	9.1
MCpl	120.3	11.1	118.2	11.1	115.0	10.0
Corporal	255.9	16.0	253.6	16.3	251.2	16.9
Private	403.3	18.9	398.3	20.5	375.2	17.1

22. Table III shows that removal of the CRA would not significantly affect the number of annual releases for most ranks. (Lower numbers of releases for Ops Captains may cause intake requirements to go down and cause Lieutenant releases to fall as well.) However, if pension benefits are delayed as well, then release rates can be expected to decline.

23. Release rate results are given below in Table IV for the Eng stream as defined previously. These results do not necessarily apply to any particular MOC. As before, cells that are shaded under Scenario 2 or 3 have a statistically significant difference from the Baseline Scenario (based on averaging the release flows from the 20 "ten year" bins under each scenario and using the standard t-test for significance at the 95% level.)

Table IV

New LRPM Results: Average Number of Annual Releases for the Engineering Stream

	Scenario 1 Current Policy		Scenario 2 No CRA Current Pension		Scenario 3 No CRA Delayed Pension	
Rank	Annual Releases	Std Dev	Annual Releases	Std Dev	Annual Releases	Std Dev
Colonel	4.9	2.1	4.2	1.9	3.6	1.8
Lt Colonel	18.8	4.2	18.3	4.2	15.8	3.5
Major	47.9	6.8	46.8	6.8	44.5	6.4
Captain (No CFR)	58.8	7.9	56.1	7.7	48.1	7.0
Lieutenant	38.6	5.8	39.7	6.7	36.7	6.1
CWO	26.8	5.0	24.9	5.0	19.0	4.1
MWO	57.2	7.7	57.8	8.1	43.4	6.3
WO	60.4	7.2	60.2	8.0	51.1	7.4
Sergeant	96.9	8.7	93.3	9.4	89.5	8.7
MCpl	167.8	12.1	172.5	12.4	159.6	12.5
Corporal	286.9	16.3	279.9	15.3	283.3	16.4
Private	203.4	13.2	204.1	14.1	188.7	14.3

24. As for the Ops group, results indicate that removal of the CRA would not significantly affect the number of annual releases for most ranks. However, if pension benefits are delayed as well, then release rates can be expected to decline. There is no significant change at the Lieutenant and Corporal ranks because few individuals stay at these ranks at high YOS.

25. Release rate results are given below in Table V for the Spt stream as defined previously. These results do not necessarily apply to any particular MOC. As before, cells that are shaded under Scenario 2 or 3 have a statistically significant difference from the Baseline Scenario (based on averaging the release flows from the 20 "ten year" bins under each scenario and using the standard t-test for significance at the 95% level.)

Table V

New LRPM Results: Average Number of Annual Releases for the Support Stream

	Scenario 1 Current Policy		Scenario 2 No CRA Current Pension		Scenario 3 No CRA Delayed Pension	
Rank	Annual Releases	Std Dev	Annual Releases	Std Dev	Annual Releases	Std Dev
Colonel	2.7	1.5	2.6	1.6	1.9	1.4
Lt Colonel	11.1	3.2	10.2	2.8	8.4	2.9
Major	27.2	4.2	27.6	4.8	29.2	5.1
Captain (No CFR)	44.6	6.6	43.8	6.1	39.8	6.1
Lieutenant	38.0	6.5	35.2	5.6	32.6	5.3
CWO	16.1	3.9	14.1	3.6	11.2	3.1
MWO	37.2	6.3	33.7	5.9	26.9	5.3
WO	43.4	7.0	44.5	6.6	40.3	6.4
Sergeant	110.3	9.8	111.4	9.9	99.1	9.6
MCpl	124.9	11.2	124.0	11.3	117.8	11.2
Corporal	221.0	15.6	218.6	15.8	221.5	15.6
Private	171.1	13.0	172.4	11.9	165.8	11.5

26. As for the Ops and Eng groups, results indicate that removal of the CRA would not significantly affect the number of annual releases for most ranks. Here the exceptions are the Lieutenant, Chief Warrant Officer, and Master Warrant Officer ranks. However, if pension benefits are delayed as well, then release rates can be expected to decline for most ranks.

Promotions

27. Promotion results are given below in Table VI for all three groupings. As before, cells that are shaded under Scenario 2 or 3 have a statistically significant difference in promotion flows from the Baseline Scenario.

Table VI

New LRPM Results: Average Number of Annual Promotions

	Scenario 1 Current Policy		Scenario 2 No CRA Current Pension		Scenario 3 No CRA Delayed Pension	
To Rank/Group	Annual Promo-tions	Std Dev	Annual Promo-tions	Std Dev	Annual Promo-tions	Std Dev
Col/Ops	15.7	4.1	15.0	3.8	9.5	2.9
LCol/Ops	46.8	6.5	45.5	6.1	31.7	5.3
Major/Ops	99.0	8.7	99.5	9.3	77.4	8.1
CWO/Ops	15.9	3.8	13.1	3.6	10.8	3.0
MWO/Ops	49.5	6.6	46.9	6.7	34.4	5.5
WO/Ops	112.8	11.2	109.2	10.8	91.1	9.0
Sgt/Ops	208.1	15.1	204.8	14.8	177.3	13.4
MCpl/Ops	328.4	18.6	323.0	18.1	292.3	16.8
Col/Eng	6.7	2.4	6.5	2.5	4.3	2.0
LCol/Eng	25.4	4.6	24.8	4.9	20.1	4.1
Maj/Eng	74.1	7.8	72.0	8.3	65.7	7.2
CWO/Eng	26.8	5.0	24.9	5.0	19.0	4.1
MWO/Eng	115.6	10.0	115.2	10.5	89.0	8.5
WO/Eng	176.0	12.2	175.4	13.3	140.1	11.6
Sgt/Eng	272.9	14.9	268.7	15.6	229.7	14.7
MCpl/Eng	445.6	18.9	446.7	18.9	393.8	18.7
Col/Spt	3.4	1.7	3.1	1.7	2.2	1.5
LCol/Spt	14.5	3.6	13.2	3.3	10.5	3.3
Maj/Spt	43.2	5.8	42.1	6.4	41.6	6.1
CWO/Spt	16.1	3.9	14.1	3.6	11.2	3.1
MWO/Spt	81.1	8.5	75.4	8.1	65.2	7.0
WO/Spt	124.5	10.2	119.9	10.5	105.5	9.6
Sgt/Spt	234.7	14.6	231.3	14.2	204.6	14.2
MCpl/Spt	365.8	18.5	360.5	18.2	327.7	17.5

28. Results indicate that removal of the CRA would not significantly affect the average number of annual promotions for most ranks and occupational groups. Exceptions to this might be senior NCM ranks in the Spt group and Chief Warrant Officer promotions in Ops MOCs. However, promotions would be expected to fall significantly if pension benefits are delayed as well.

Annual Intake

29. Results are given below in Table VII for annual intake. As before, cells that are shaded under Scenario 2 or 3 have a statistically significant difference from the Baseline Scenario (based on averaging the intake from the 20 "ten year" bins under each scenario and using the standard t-test for significance at the 95% level.)

Table VII

New LRPM Results: Average Annual Intake

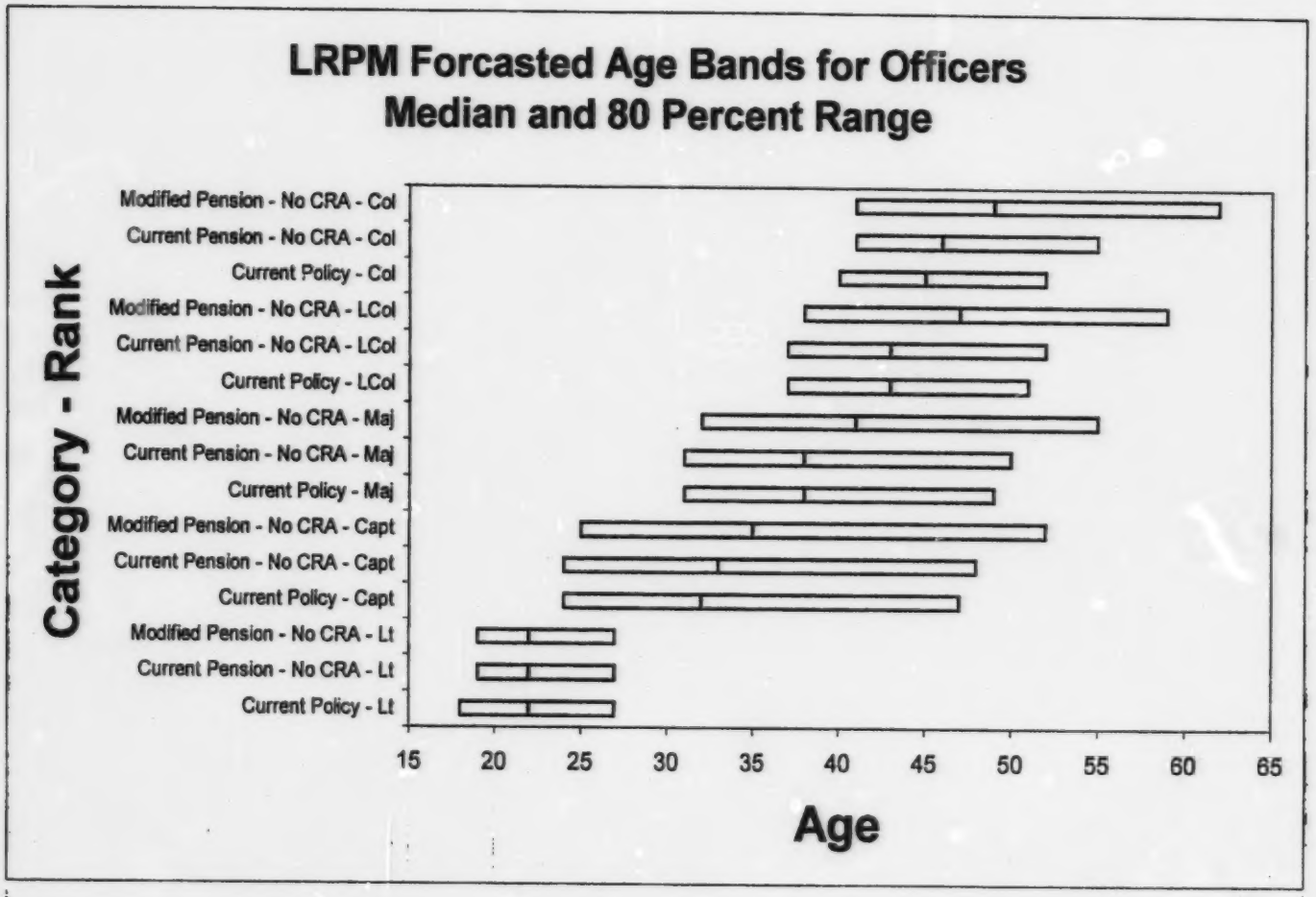
	Scenario 1 Current Policy		Scenario 2 No CRA Current Pension		Scenario 3 No CRA Delayed Pension	
Entry Type	Annual Intake	Std Dev	Annual Intake	Std Dev	Annual Intake	Std Dev
Basic Pte Ops	1435.0	35.6	1405.6	38.9	1342.2	32.0
Basic Pte Eng	716.2	24.0	702.1	23.4	656.4	25.7
Basic Pte Spt	569.3	21.3	562.7	22.8	536.0	21.0
ROTP Ops	83.7	7.9	77.8	7.5	75.0	7.6
ROTP Eng	99.3	8.9	98.8	9.7	86.7	9.0
ROTP Spt	47.3	6.3	45.4	6.1	44.0	6.0
DEO Ops	91.8	8.6	87.9	8.5	79.8	7.3
DEO Eng	50.8	6.0	47.6	6.9	45.6	6.4
DEO Spt	72.9	7.9	69.7	7.5	63.6	6.9
OCTP Civ Ops	132.1	10.2	129.9	10.2	119.2	8.6
Total	3298.2	55.2	3211.4	94.0	3048.5	44.4

30. Results indicate that removal of the CRA would affect intake requirements for most entry plans, with the exceptions of NCM Spt intake at the Private rank and Ops officer OCTP intake. For Scenario 3, all intake flows are significantly reduced.

Age Distribution

31. Figures 1 and 2 display LRPM results for the CF age distribution for all officers and NCMs respectively. That is, Ops, Eng, and Spt streams have been combined. Each figure displays the middle 80% age range for each rank according to scenario - plotted on a horizontal bar chart with median ages included. As before, results are based on averaging the corresponding age distributions obtained from the 20 "ten year" bins of modelling results obtained from each scenario.

32. The figures indicate that removal of the CRA alone would not significantly affect age distributions in most ranks (i.e. Scenario 2). There would be a longer "tail" in the distribution of members at higher ages, particularly at higher ranks, but the median age for each rank would vary by no more than one year. If pension benefits are delayed as well (i.e. Scenario 3), then some more significant distortions of age distributions can be expected.


LRPM Forcasted Age Bands for Officers
Median and 80 Percent Range
Category - Rank
Modified Pension - No CRA - Col
Current Pension - No CRA - Col
Current Policy - Col
Modified Pension - No CRA - LCol
Current Pension - No CRA - LCol
Current Policy - LCol
Modified Pension - No CRA - Maj
Current Pension - No CRA - Maj
Current Policy - Maj
Modified Pension - No CRA - Capt
Current Pension - No CRA - Capt
Current Policy - Capt
Modified Pension - No CRA - Lt
Current Pension - No CRA - Lt
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15
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Age

Figure 1

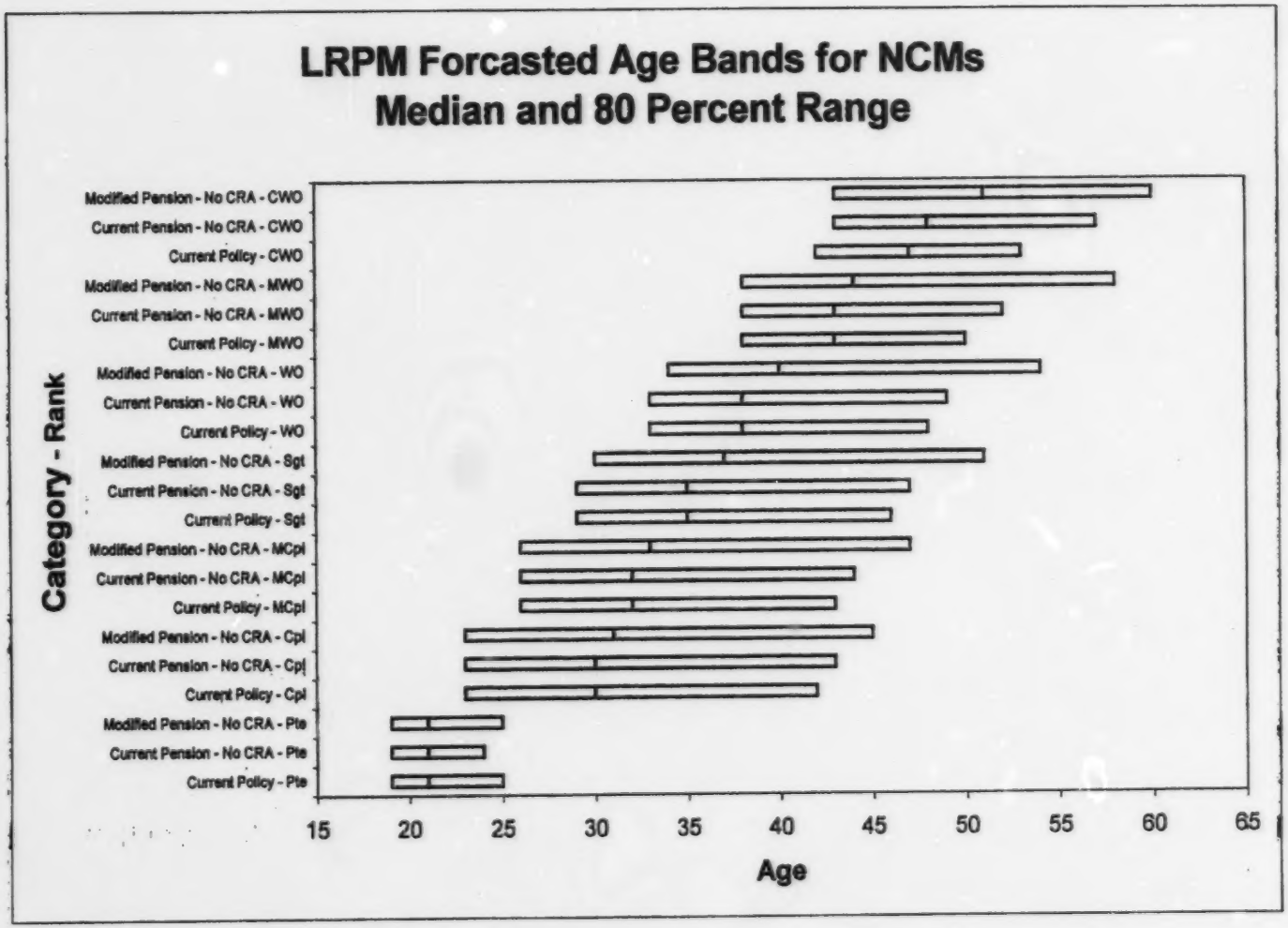
LRPM Forcasted Age Bands for NCMs
Median and 80 Percent Range
Category - Rank
Modified Pension - No CRA - CWO
Current Pension - No CRA - CWO
Current Policy - CWO
Modified Pension - No CRA - MWO
Current Pension - No CRA - MWO
Current Policy - MWO
Modified Pension - No CRA - WO
Current Pension - No CRA - WO
Current Policy - WO
Modified Pension - No CRA - Sgt
Current Pension - No CRA - Sgt
Current Policy - Sgt
Modified Pension - No CRA - MCpl
Current Pension - No CRA - MCpl
Current Policy - MCpl
Modified Pension - No CRA - Cpl
Current Pension - No CRA - Cpl
Current Policy - Cpl
Modified Pension - No CRA - Pte
Current Pension - No CRA - Pte
Current Policy - Pte
15
20
25
30
35
40
45
50
55
60
65
Age

Figure 2

IV. DISCUSSION

The Previous D Man A Study of CRA Policy

33. Reference 2 concludes that:

> "Changing or eliminating the compulsory retirement point would have lasting implications on the CF personnel system. The fundamental consequences would be an aging of the senior ranks, a reduction in promotion opportunities, and a decrease in essential management control."

This study does not confirm such a conclusion. While the above conclusion might be valid for particular ranks and occupations, the majority of CF members would not face significantly different promotion prospects. Furthermore, release rates would in general remain comparable to the current situation. The only significant effect would be a reduction of annual intake. In our Scenario 3 (which simulates delayed pension benefits as well as elimination of the CRA), there would be significant changes to all these flows.

34. There are several reasons why our analysis reports a different result from that of Ref 2. That study was restricted to a single officer "study MOC" which was synthesized from the ARMD, INF, PLT, MARE, and MARS MOCs. The current study is based on a far larger set of MOCs with significantly more available input data, including both officer and NCM occupational groupings. We have found that NCM occupations are less likely to be affected by the elimination of the CRA. Also, Ref 2 used different baseline Terms of Service assumptions such as no Indefinite Period of Service (IPS) offers for Captains.

35. The baseline assumption of Ref 2 took a rather conservative view that there would be a steady 10% attrition rate once 35 YOS was reached. However, many NCMs reach 35 YOS before age 55. In our view, it was inappropriate for Ref 2 to state that NCM release patterns are comparable to officer release patterns. As modelled here, we observe that the elimination of the CRA would have a lesser effect on the NCM population than on the officer population.

36. The authors of Ref 2 admitted that they could not examine the lengthy demographic transition to a steady-state situation. This is not a problem for GeM simulation models. By running simulation models over very long time intervals, any transition problems to a steady-state situation can be avoided by making sure that all current members of the CF in the database have been released.

Suggestions for Further Research

37. Resource limitations have prevented PORT from conducting an extensive sensitivity analysis on issues that impact upon the CRA policy. For example, individual MOC CRA analyses have not been done. Such a study would require considerable time and resources.

38. This study has looked at the long-term impact of extending or eliminating the CRA policy. The new LRPM methodology also allows us to examine transition consequences. The CF currently is undergoing major structural change with Terms of Service policies that are already working to produce an "older" military force (e.g. conversion of large numbers of individuals to IPS contracts). Further research should be undertaken to identify policies that would help to mitigate any adverse consequences of eliminating the CRA, such as Intermediate Engagement (IE) to IPS conversion rates.

39. Elimination of the CRA might give HR planners the challenge of finding operationally meaningful employment for an ever increasing number of individuals who have passed twenty YOS for another twenty to twenty five years as the current "baby boom" works its way through the CF. Conversely, a study of the consequences of increased voluntary attrition resulting from delayed or denied promotion could also be considered.

40. If it is accepted that the CRA can be eliminated without causing undue HR problems, it becomes somewhat unnecessary to maintain historical promotion zones. Intuitively, our forecast of reduced promotion flows can be countered by

delaying promotion to senior ranks. Extending promotion zones might allow greater opportunity for extending tour lengths for senior officers and reducing certain development costs (e.g. the cost move budget). The feasible extent of the promotion zone shift should be examined in a subsequent study.

41. The CF also requires opportunities to align its internal demographics to better reflect the population of Canada. For example, "Employment Equity" groups (females, aboriginal peoples, and visible minorities) are currently under-represented in the CF. Measures such as elimination of the CRA may serve to restrict intake and promotion opportunity, thus favouring the retention of the current demographic. Studies should be done to investigate the balance between equity issues and the CRA.

42. CRA analysis should also include promotions to and within the general officer category. These flows may have considerable impact on the senior officer population flows.

43. Another suggested research area might be an analysis of physical fitness issues and health costs attributable to changes in the age distribution of the CF that might follow a change of the CRA policy.

44. Further research in this particular area is contingent upon sponsor interest and availability of resources in the PORT.

V. SUMMARY AND CONCLUSIONS

45. The new LRPM is an application of the GeM model development environment that has been applied to analyze the implications of changing the CRA policy. Measures that have been studied include annual releases, promotions, and intake as well as the age distribution of the CF.

46. While the elimination of the CRA may have a negative impact on a limited number of occupational groups at certain rank levels, model results indicate that the CF would not be severely affected. Removal of the CRA (without changing pension entitlements) would not significantly alter the age distribution of the CF and the average number of annual releases and promotions for most CF members - under the current Terms of Service. However, annual intake would be expected to decline. If the CRA were to be eliminated at the same time that pension entitlements were delayed, then there would be adverse effects on the age distribution, promotion rates, release rates, and annual intake.

47. This paper includes a critique of previous research on CRA policy and suggestions for further research.

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Recently, the Personnel Operational Research Team (PORT) was asked to carry out an assessment of the implications of the elimination of the Compulsory Retirement Age (CRA). Three different CRA scenarios have been analyzed using the new Long Range Planning Model, an application developed by the PORT using the Generic Model (GeM) environment. Measures that have been studied include annual releases, promotions, and intake as well as the age distribution of the CF.

While the elimination of the CRA may have a negative impact on a limited number of occupational groups at certain rank levels, model results indicate that the Canadian Forces (CF) would not be severely affected. Removal of the CRA (without changing pension entitlements) would not significantly alter the age distribution of the CF and the average number of annual releases and promotions for most CF members - under the current Terms of Service. However, annual intake would be expected to decline. If the CRA were to be eliminated at the same time that pension entitlements were delayed, then there would be adverse effects on the age distribution, promotion rates, release rates, and annual intake.

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